

DATA EVALUATION RECORD

CASE GS 0096

PICLORAM

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CHEM 005101

BRANCH EEB DISC _____

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FORMULATION Crystals

Woodward, D. F. 1979. Assessing the Hazard of Picloram to Cutthroat Trout. J. Range Manag. 32:230-232.

SUBST. CLASS = S

DIRECT RVW TIME = (MH)

REVIEWED BY: M. A. Mayes, Ph.D.
TITLE: Aquatic Toxicologist
ORG: Health and Environmental Sciences
LOC/TEL: The Dow Chemical Company

SIGNATURE: Monte A. Mayes

DATE: 12-6-82

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE:

DATE:

CONCLUSIONS

This study is scientifically sound. The experiment was designed to simulate field runoff conditions after the application of picloram. The results suggest that concentrations as low as 610 µg/L will affect the survival and growth of cutthroat trout. This study is not required for the registration of picloram.

DATA EVALUATION RECORD

1. CHEMICAL: Picloram (4-amino-3,5,6-trichloropicolinic acid)
2. FORMULATION: Technical Grade 90% Active
3. CITATION: Woodward, D. F. 1979. Assessing the Hazard of Picloram to Cutthroat Trout. J. Range Manag. 32:230-232.
4. REVIEWED BY: M. A. Mayes, Ph.D.
Aquatic Toxicologist
Health and Environmental Sciences
The Dow Chemical Company
5. DATE REVIEWED: July 9, 1982
6. TEST TYPE: Aquatic Toxicity: Fish
 - A. Test Species: Salmo clarki (Cutthroat Trout)
7. REPORTED RESULTS: The maximum exposure concentrations not affecting survival and growth ranged from 290 to 48 µg/L.
8. REVIEWER'S CONCLUSIONS: This study is scientifically sound. The experiment was designed to simulate field runoff conditions after the application of picloram. The results suggest that concentrations as low as 610 µg/L will affect the survival and growth of cutthroat trout. This study is not required for the registration of picloram.

MATERIALS AND METHODS:

The test fish were obtained as eyed eggs from Jackson (Wyoming) National Fish Hatchery and testing was begun three days after hatching.

The experimental design was to simulate picloram runoff following into streams following successive rainfalls.

Five testing regimens were used to represent downstream dilution, with a 50% difference in concentration between each regimen, and a control was established and received acetone at a rate equivalent to the highest picloram concentration. Each regimen was tested four times using the same fish to simulate picloram in runoff after four rainstorms. The concentrations of picloram in each successive exposure period were reduced by 50% to simulate the decreased presence of picloram in runoff water with time. Exposure periods began on days 1, 8, 10, and 22, and terminated 48 hours later allowing picloram to be gradually diluted out of the system.

Water characteristics: spring water, 9.5°C, pH 7.4 and alkalinity 206 mg/L as CaCO_3 .

A proportional diluter was used as the toxicant delivery system, flow rate was 200 ml/m into 40L test chambers.

Data recorded was alevin survival, yolk absorption time, fry survival and growth to 60 days.

STATISTICAL ANALYSIS:

Survival of alevins and fry was compared by a binominal chi-square test for comparison of proportions and length; and weights of fry at 60 days were analyzed by analysis of variance and a multiple means comparison test to determine significant differences between treatments.

RESULTS/DISCUSSION:

The maximum exposure concentrations not affecting survival and growth ranged from 290 to 48 µg/L.

REVIEWER'S EVALUATION:

This appears to be a well-conducted study which attempts to measure the toxic effects of different levels of picloram simulating exposure from run off.

VALIDATION:

Category: Supplemental

Rationale: Not a requirement test for registration

Repairability: N.A.